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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/663,834

09/17/2003

Jae-Hwan Hyun

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06/30/2006

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EXAMINER

MORRISON, THOMAS A

ART UNIT

PAPER NUMBER

3653

DATE MAILED: 06/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/663,834

Applicant(s)

HYUN, JAE-HWAN

Examiner

Thomas A. Morrison

Art Unit

3653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 5-35 is/are rejected.
- 7) ☒ Claim(s) 2-4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/07/2006 has been entered.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 7-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 7-10 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: **(1) the structural relationship between the third lever and the paper feed cassette in claim 7, which allows the third lever to pivot downward so that the first lever is normally located inside the sensing area of the paper sensor when no paper is stacked in the paper feed cassette.**

Claims 11-34 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: **(1)** the structural relationship between the third lever and the paper in the paper feed cassette of claim 11, which allows the third lever to cause the actuator to pivot such that the first lever enters the sensing area of the sensor **when the paper is not stacked in the paper feed cassette**; and **(2)** the structural relationship between the third lever and the paper that moves along the duplex printing paper path, which allows the actuator to pivot, as claimed. How is the movement of the paper along the duplex printing paper path related to the third lever and the pivoting of the actuator?

Regarding claim 23, it is first noted that claim 22 recites that the **third** lever pivots into the second slot. Claim 23, which then depends from claim 22, recites a rear end of the second slot in the pressing plate to stop the **second** lever from pivoting. As such, claim 23 appears to be inaccurate. Does the rear end of the second slot stop the second lever or the third lever from pivoting?

Claim 26 recites the limitation "the duplex printing path" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 34 recites the limitation "the duplex printing paper shaft" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 35, lines 8-10 of this claim are nonsensical. It is unclear what functions are performed.

Also, claim 35 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: (1) the structure or structural relationship between the recited elements in claim 35 that allows the actuator to function, as claimed.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 5 and 6, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Applicant's admitted prior art in Fig.1 and the background section of the instant application.

Regarding claim 1, Fig. 1 shows a paper detecting apparatus (including 20, 25, and 23) of an image forming machine (Fig. 1) having a duplex printing function (i.e., see numbered paragraph [0004] of instant application) including

an actuator (including 23) pivotably disposed above a paper feed cassette (30) and below a duplex printing paper path (40), that is moved by a paper; and

a paper sensor (25) disposed next to the actuator (including 23) that senses movement of the actuator (including 23) and generates a signal, wherein the actuator

(including 23) pivots in a predetermined angle when paper is being fed along the duplex printing paper path (40), and the paper sensor (25) generates a signal upon sensing the actuator (including 23) pivot.

Regarding claim 5, Fig. 1 shows a stopper (end of slot 42) formed on the duplex printing paper path (40) limiting pivoting space of the actuator (including 23). More specifically, the length of the swing slot 42 in Fig. 1 of the instant application defines the limits of the pivoting space of the actuator. As such, applicant's admitted prior art Fig. 1 and the background section of the instant application meets all of the limitations of claim 5 as now amended.

Regarding claim 6, the numbered paragraph [0013] discloses that the paper sensor (25) is a photo sensor.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,961,111 (Kurata et al.).

Regarding claim 1, Fig. 9 shows a paper detecting apparatus (including 39) of an image forming machine (Abstract) having a duplex printing function (Abstract) including

an actuator (39) pivotably disposed above a paper feed cassette (near 13) and below a duplex printing paper path (19), that is moved by a paper; and

a paper sensor (not numbered) disposed next to the actuator (39) that senses movement of the actuator (39) and generates a signal, wherein the actuator (39) pivots in a predetermined angle when paper is being fed along the duplex printing paper path (19), and the paper sensor generates a signal upon sensing the actuator (39) pivot.

***Response to Arguments***

5. Applicant's arguments filed 03/07/2006 have been fully considered but they are not persuasive. Applicant argues that, "when no paper is stacked in the paper feed cassette or" of claim 1 has been deleted in amended claim 1.

In response, it is noted that Applicant's Admitted Prior Art (i.e., AAPA) in Fig. 1 and the background section of the instant application meets the limitations of amended claim 1. Namely, the AAPA shows an actuator (including 23) and a paper sensor (25) that operates as claimed when the paper is fed along the duplex printing paper path. The rejections of claim 1 are outlined above in greater detail.

***Allowable Subject Matter***

6. Claims 2-4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 7-34 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action. Claim 35 is too unclear to make a determination as to the allowability of this claim.

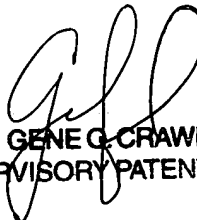
***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas A. Morrison whose telephone number is (571) 272-7221. The examiner can normally be reached on M-F, 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Crawford can be reached on (571) 272-6911. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

06/16/2006

  
GENE G. CRAWFORD  
SUPERVISORY PATENT EXAMINER